

## LIST OF CLAIMS / AMENDMENTS

Please cancel claim 28 without prejudice.

Please amend claims 1, 10-13, 19-21, 24, 29-30, 35, 39-40, 46, and 48-58 as shown herein.

Claims 1-27 and 29-58 are pending and are listed following:

**1. (currently amended)** A visual query system, comprising:  
query criteria of a query expression displayed for display as shapes that have a semantic relationship which represents logical associations between the query criteria;

a user interface configured to display a query result of the query expression;

and

a query statement generator configured to:

determine Boolean associations corresponding to the semantic relationship of the shapes;

generate a query statement for each shape of query criteria;

combine the query statements according to the Boolean associations

to generate the query expression; and

generate [[a]] the query result of the combined query statements that form the query expression.

1           **2. (original)** A visual query system as recited in claim 1, wherein  
2 the query statement generator is further configured to:

3           generate the query statements as a SQL query statement for each shape of  
4 query criteria; and

5           generate the query result from a SQL query of the combined SQL query  
6 statements.

7  
8           **3. (original)** A visual query system as recited in claim 1, wherein a  
9 first shape of query criteria is displayed proximate a second shape of query criteria  
10 such that the first shape has an AND Boolean association with the second shape.

11  
12           **4. (original)** A visual query system as recited in claim 1, wherein a  
13 first shape of query criteria is displayed proximate a second shape of query criteria  
14 within a visual query definition such that the first shape has an AND Boolean  
15 association with the second shape within the visual query definition.

16  
17           **5. (original)** A visual query system as recited in claim 1, wherein a  
18 first shape of query criteria is displayed proximate a second shape of query criteria  
19 within a visual query definition that is bordered to define a Boolean association  
20 between the first shape and the second shape within the visual query definition.

1           **6. (original)**   A visual query system as recited in claim 1, wherein a  
2 first set of query criteria are displayed within a first visual query definition, and  
3 wherein a second set of query criteria are displayed within a second visual query  
4 definition, the first set of query criteria including the second set of query criteria  
5 such that the second visual query definition is displayed within the first visual  
6 query definition.

7  
8           **7. (original)**   A visual query system as recited in claim 1, wherein:  
9 a first set of query criteria are displayed within a first visual query  
10 definition;

11 a second set of query criteria are displayed within a second visual query  
12 definition, the first set of query criteria including the second set of query criteria  
13 such that the second visual query definition is displayed within the first visual  
14 query definition; and

15 the query statement generator is further configured to generate a first query  
16 result of the first set of query criteria and generate a second query result of the  
17 second set of query criteria such that the first query result and the second query  
18 result can be displayed as multiple query results.

1           **8. (original)**   A visual query system as recited in claim 1, wherein an  
2 additional shape of query criteria is configured for display with the query criteria,  
3 and wherein the query statement generator is further configured to:

4           determine an additional Boolean association corresponding to the semantic  
5 relationship of the additional shape of query criteria;

6           generate an additional query statement for the additional shape of query  
7 criteria;

8           combine the query statements and the additional query statement according  
9 to the additional Boolean association; and

10          update the query result of the combined query statements and the additional  
11 query statement.

12  
13           **9. (original)**   A visual query system as recited in claim 1, further  
14 comprising data tables that maintain data criteria, and wherein the query criteria is  
15 displayed in user-identifiable terms as metadata that correlates to the data criteria  
16 maintained in the data tables.

17  
18           **10. (currently amended)**   A visual query system as recited in  
19 claim 1, ~~further comprising a~~ wherein the user interface is further configured to:

20           display criteria selections that include the query criteria within a criteria  
21 selection display on the user interface;

22           display the shapes of query criteria within a visual query definition on the  
23 user interface; and

24           display the query result within the visual query definition.  
25

1           **11. (currently amended)**     A visual query system as recited in  
2 claim 1, further comprising an audio output device configured to generate an  
3 audible indication corresponding to at least one of an update ~~and~~ or a display of  
4 the query result.

5  
6           **12. (currently amended)**     A visual query system, comprising:  
7 a visual query definition displayed ~~configured~~ to associate query criteria of  
8 a query expression, the query criteria displayed as shapes within the visual query  
9 definition in a display such that proximate positions of the query criteria define  
10 query criteria associations;

11           a user interface configured to display a query result of the query expression;  
12 and

13           a query statement generator configured to:  
14                 determine a query statement association for each display relationship  
15 of the query criteria;

16                 generate a query statement for each of the query criteria;  
17                 combine the query statements according to the query statement  
18 associations to generate the query expression; and

19                 generate ~~[[a]]~~ the query result of the combined query statements that  
20 form the query expression for display in the visual query definition.

1           **13. (currently amended)**     A visual query system as recited in  
2 claim 12, wherein the visual query definition is further displayed ~~configured~~ to  
3 associate the query criteria ~~in the display~~ without logic operators connected  
4 between the query criteria.

5  
6           **14. (original)**     A visual query system as recited in claim 12, wherein  
7 the query statement generator is further configured to determine the query  
8 statement associations as a Boolean association for each display relationship of the  
9 query criteria.

10  
11           **15. (original)**     A visual query system as recited in claim 12, wherein  
12 the query statement generator is further configured to generate the query  
13 statements as a SQL query statement for each query criteria.

14  
15           **16. (original)**     A visual query system as recited in claim 12, wherein a  
16 first query criteria is displayed proximate a second query criteria within the visual  
17 query definition such that the first query criteria has an AND query statement  
18 association with the second query criteria.

19  
20           **17. (original)**     A visual query system as recited in claim 12, wherein a  
21 first query criteria is displayed proximate a second query criteria within the visual  
22 query definition such that the first query criteria has an OR query statement  
23 association with the second query criteria.

1           **18. (original)**     A visual query system as recited in claim 12, wherein  
2 the visual query definition is bordered to define a query statement association  
3 between a first query criteria displayed proximate a second query criteria within  
4 the visual query definition.

5  
6           **19. (currently amended)**     A visual query system as recited in  
7 claim 12, further comprising a second visual query definition displayed ~~configured~~  
8 to associate additional query criteria ~~in the display~~ of the query expression,  
9 wherein:

10           the visual query definition includes the second visual query definition such  
11 that the second visual query definition is displayed within the visual query  
12 definition; and

13           the query statement generator is further configured to generate a second  
14 query result for the second visual query definition such that the query result and  
15 the second query result can be displayed as multiple query results.  
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1           **20. (currently amended)**     A visual query system as recited in  
2 claim 12, wherein the visual query definition is further displayed ~~configured~~ to  
3 associate additional query criteria ~~in the display~~, and wherein the query statement  
4 generator is further configured to:

5                 determine an additional query statement association for a display  
6 relationship of the additional query criteria;

7                 generate an additional query statement for the additional query criteria;

8                 combine the query statements and the additional query statement according  
9 to the additional query statement association; and

10                update the query result of the combined query statements and the additional  
11 query statements.

12  
13           **21. (currently amended)**     A visual query system as recited in claim  
14 12, ~~further comprising a~~ wherein the user interface is further configured to:

15                 display criteria selections that include the query criteria within a criteria  
16 selection display on the user interface;

17                 display the query criteria within the visual query definition on the user  
18 interface; and

19                 display the query result within the visual query definition on the user  
20 interface.



1           **22. (original)**     A visual query system as recited in claim 12, further  
2 comprising data tables that maintain data criteria, and wherein the query criteria is  
3 displayed in user-identifiable terms as metadata that correlates to the data criteria  
4 maintained in the data tables.

5  
6           **23. (original)**     A visual query system as recited in claim 12, further  
7 comprising an audio output device configured to generate an audible indication  
8 corresponding to at least one of an update and a display of the query result.

9  
10          **24. (currently amended)**     A user interface, comprising:  
11          a criteria selection display of query criteria;  
12          a visual query definition displayed to associate the query criteria of a query  
13 expression, each of the query criteria represented by a shape displayed within the  
14 visual query definition;  
15          a display attribute of the visual query definition that defines a Boolean  
16 association of the query criteria represented by the shapes displayed within the  
17 visual query definition; and  
18          a query result displayed within the visual query definition, the query result  
19 generated from a combination of one or more query statements that are combined  
20 to generate the query expression, ~~that each represent~~ the one or more query  
21 statements representing a shape of query criteria and the association of the query  
22 criteria.

1           **25. (original)** A user interface as recited in claim 24, wherein the  
2 visual query definition is further displayed to associate the query criteria based on  
3 proximate positions of the query criteria in the visual query definition and without  
4 logic operators connected between the query criteria.

5  
6           **26. (original)** A user interface as recited in claim 24, wherein the  
7 query criteria are drag-and-drop query criteria from the criteria selection display to  
8 the visual query definition.

9  
10          **27. (original)** A user interface as recited in claim 24, wherein the  
11 visual query definition can be copied to create a second visual query definition for  
12 display on the user interface, and wherein the second visual query definition is  
13 redefined in an event that the visual query definition is redefined.

14  
15          **28. (canceled)** ~~A user interface as recited in claim 24, wherein an~~  
16 ~~attribute of the visual query definition defines a Boolean association of the query~~  
17 ~~criteria represented by the shapes displayed within the visual query definition.~~

18  
19          **29. (currently amended)** A user interface as recited in claim 24,  
20 wherein a color of the visual query definition defines [[a]] the Boolean association  
21 of the query criteria represented by the shapes displayed within the visual query  
22 definition.

1           **30. (currently amended)**     A user interface as recited in claim 24,  
2 wherein a border of the visual query definition defines [[a]] the Boolean  
3 association of the query criteria represented by the shapes displayed within the  
4 visual query definition.

5  
6           **31. (original)**     A user interface as recited in claim 24, wherein the one  
7 or more query statements are SQL query statements, and wherein the query result  
8 is generated from the combination of the one or more SQL query statements.

9  
10          **32. (original)**     A user interface as recited in claim 24, wherein a first  
11 shape of query criteria is displayed proximate a second shape of query criteria  
12 within the visual query definition such that the first shape has an AND query  
13 statement association with the second shape.

14  
15          **33. (original)**     A user interface as recited in claim 24, wherein a first  
16 shape of query criteria is displayed proximate a second shape of query criteria  
17 within the visual query definition such that the first shape has an OR query  
18 statement association with the second shape.

19  
20          **34. (original)**     A user interface as recited in claim 24, further  
21 comprising additional query criteria not associated with the visual query definition  
22 and displayed to indicate the non-association.

1           **35. (currently amended)**     A method, comprising:  
2           displaying query criteria of a query expression as shapes on a user  
3           interface;  
4           determining a query statement association for each display relationship of  
5           the shapes of query criteria;  
6           generating a query statement for each shape of query criteria; ~~and~~  
7           combining the query statements according to the query statement  
8           associations to generate the query expression; and  
9           displaying a query result of the query expression.

10  
11           **36. (original)**     A method as recited in claim 35, wherein determining  
12           the query statement associations includes determining a Boolean association  
13           corresponding to each display relationship of the shapes of query criteria.

14  
15           **37. (original)**     A method as recited in claim 35, wherein generating  
16           the query statements includes generating a SQL query statement for each shape of  
17           query criteria.

18  
19           **38. (original)**     A method as recited in claim 35, further comprising  
20           displaying criteria selections that include the query criteria in a criteria selection  
21           display on the user interface.

1           **39. (currently amended)**       A method as recited in claim 35, further  
2 comprising generating [[a]] the query result of the combined query statements that  
3 form the query expression.

4  
5           **40. (currently amended)**       A method as recited in claim 35, further  
6 comprising displaying [[a]] the query result of the ~~combined~~ query expression  
7 ~~statements~~ within a visual query definition that includes the shapes of query  
8 criteria.

9  
10          **41. (original)**       A method as recited in claim 35, wherein displaying  
11 the query criteria as shapes includes displaying a first shape of query criteria  
12 proximate a second shape of query criteria within a visual query definition such  
13 that the first shape has a Boolean association with the second shape.

14  
15          **42. (original)**       A method as recited in claim 35, wherein displaying  
16 the query criteria as shapes includes displaying a first shape of query criteria  
17 proximate a second shape of query criteria within a visual query definition such  
18 that the first shape has an AND Boolean association with the second shape.

19  
20          **43. (original)**       A method as recited in claim 35, wherein displaying  
21 the query criteria as shapes includes displaying a first shape of query criteria  
22 proximate a second shape of query criteria within a visual query definition that is  
23 bordered to define an OR Boolean association between the first shape and the  
24 second shape.  
25

1           **44. (original)**     A method as recited in claim 35, wherein displaying  
2 the query criteria includes displaying the query criteria in user-identifiable terms  
3 as metadata that correlates to data criteria maintained in data tables.

4  
5           **45. (original)**     A method as recited in claim 35, wherein displaying  
6 the query criteria includes displaying a first set of query criteria within a first  
7 visual query definition, and displaying a second set of query criteria within a  
8 second visual query definition such that the first set of query criteria includes the  
9 second set of query criteria.

10  
11           **46. (currently amended)**     A method as recited in claim 35, further  
12 comprising:

13           adding additional query criteria as a shape on the user interface;  
14           determining an additional query statement association for a display  
15 relationship of the additional shape of query criteria;  
16           generating an additional query statement corresponding to the additional  
17 shape of query criteria;  
18           combining the query statements and the additional query statement  
19 according to the additional query statement association; and  
20           updating [[a]] the query result displayed on the user interface to include the  
21 additional query criteria.  
22  
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1           **47. (original)**     A method as recited in claim 46, wherein adding the  
2 additional query criteria includes dragging-and-dropping the additional query  
3 criteria on the user interface.

4  
5           **48. (currently amended)**     A method as recited in claim 35, further  
6 comprising generating an audible indication corresponding to at least one of a  
7 display of ~~[[a]]~~ the query result on the user interface ~~and~~ or an update of ~~[[a]]~~ the  
8 query result displayed on the user interface.

9  
10          **49. (currently amended)**     One or more computer readable storage  
11 media comprising computer executable instructions that, when executed, direct a  
12 computing device to perform the method of claim 35.

13  
14          **50. (currently amended)**     One or more computer readable storage  
15 media comprising computer executable instructions that, when executed, direct a  
16 computing device to:

17           display a visual query definition to associate query criteria of a query  
18 expression, the query criteria displayed as shapes having display relationships  
19 within the visual query definition;

20           determine a query statement association for each shape of query criteria  
21 according to the display relationships;

22           generate a query statement for each shape of query criteria;

23           combine the query statements according to the query statement associations  
24 to generate the query expression; and  
25

1 generate a query result of the combined query statements that form the  
2 query expression for display in the visual query definition.

3  
4 **51. (currently amended)** One or more computer readable storage  
5 media as recited in claim 50, further comprising computer executable instructions  
6 that, when executed, direct the computing device to determine the query statement  
7 association for each shape of query criteria as a Boolean association.

8  
9 **52. (currently amended)** One or more computer readable storage  
10 media as recited in claim 50, further comprising computer executable instructions  
11 that, when executed, direct the computing device to generate the query statement  
12 for each shape of query criteria as a SQL query statement.

13  
14 **53. (currently amended)** One or more computer readable storage  
15 media as recited in claim 50, further comprising computer executable instructions  
16 that, when executed, direct the computing device to display criteria selections that  
17 can be added to the visual query definition.

18  
19 **54. (currently amended)** One or more computer readable storage  
20 media as recited in claim 50, further comprising computer executable instructions  
21 that, when executed, direct the computing device to display a first shape of query  
22 criteria proximate a second shape of query criteria within the visual query  
23 definition such that the first shape has a Boolean association with the second  
24 shape.  
25



1           **55. (currently amended)**       One or more computer readable storage  
2 media as recited in claim 50, further comprising computer executable instructions  
3 that, when executed, direct the computing device to display a first shape of query  
4 criteria proximate a second shape of query criteria within the visual query  
5 definition such that the first shape has an AND Boolean association with the  
6 second shape.

7  
8           **56. (currently amended)**       One or more computer readable storage  
9 media as recited in claim 50, further comprising computer executable instructions  
10 that, when executed, direct the computing device to display a first shape of query  
11 criteria proximate a second shape of query criteria within the visual query  
12 definition that is bordered to define an OR Boolean association between the first  
13 shape and the second shape.

14  
15           **57. (currently amended)**       One or more computer readable storage  
16 media as recited in claim 50, further comprising computer executable instructions  
17 that, when executed, direct the computing device to display a first set of query  
18 criteria within the visual query definition, and display a second set of query  
19 criteria within a second visual query definition such that the visual query  
20 definition includes the first set of query criteria and the second set of query  
21 criteria.

1           **58. (currently amended)**       One or more computer readable storage  
2 media as recited in claim 50, further comprising computer executable instructions  
3 that, when executed, direct the computing device to generate an audible indication  
4 corresponding to an update of the query result displayed within the visual query  
5 definition.